Analisis perbandingan metode artificial neural network dan distribusi lognormal untuk perancangan penjadwalan predictive maintenance = Comparative analysis of artificial neural network and lognormal distribution methods for designing predictive maintenance scheduling

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Abstrak

Penelitian ini membahas mengenai terjadinya unplanned maintenance pada mesin hydraulic D/E di area finishing mill, Pabrik Hot Strip Mill pada pabrik penghasil baja PT. Krakatau Steel. Unplanned maintenance menyebabkan terganggunya proses produksi. Oleh karena itu, unplanned maintenance akan diubah menjadi planned maintenance. Perancangan planned maintenance akan dilakukan dengan 2 metode, yaitu Artificial Neural Network dan Distribusi Lognormal. Kedua metode ini kemudian akan dibandingkan berdasarkan nilai mean square error (MSE), mean absolute percentage error (MAPE) dan mean absolute deviation (MAD) untuk melihat metode mana yang lebih sesuai untuk kasus ini. Setelah melakukan perbandingan kedua metode, maka diketahui bahwa neural network lebih akurat dibandingkan metode distribusi lognormal karena memiliki nilai error yang lebih kecil.

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This study discusses the occurrence of unplanned maintenance on hydraulic D / E machines in the area finishing mill, Hot Strip Mill Plant PT. Krakatau Steel steelmaker. Unplanned maintenance led to disruption of the production process. Therefore, unplanned maintenance will be changed to planned maintenance. The design of planned maintenance will be done by 2 methods, namely Artificial Neural Network and lognormal distribution. Both of these methods will then be compared based on the mean square error (MSE), mean absolute percentage error (MAPE) and mean absolute deviation (MAD) to see which method is more appropriate for this case. After doing a comparison of the two methods, it is known that a neural network is more accurate than the lognormal distribution method because it has a smaller error.